IN THE CLAIMS:

1. (Previously Presented): A cover assembly for a microplate, said assembly comprising:

a layer of material shaped and dimensioned to removably seal a plurality of well openings of said microplate;

a pressure plate disposed on said layer of material for dispersing a compressive force in a generally uniform manner across said layer of material;

a cover having a top and first and second sides, said top shaped so as to generate said compressive force when said cover is engaged with said microplate, said first and second sides each including an inward projection for supporting a bottom edge of said microplate;

a plurality of vertical tabs extending downward from said projections; and

a plurality of recesses in said cover assembly that register with said tabs, whereby a plurality of the cover assemblies can be stacked with the vertical tabs of each cover assembly extending down into the recesses of a cover assembly that is disposed beneath.

2. (Previously Presented): The cover assembly as in claim 1 wherein said top and said pressure plate each include one or more horizontal tabs extending generally parallel to said top and said sides horizontal tabs enabling said cover to be engaged with or disengaged from said microplate by a robotic system.

3. (Previously Presented): The cover assembly as in claim 1 wherein said first and second sides of said cover include apertures which render at least portions of the side surfaces of said microplate visible when said cover is engaged with said microplate.

4. (Canceled).

5. (Canceled).

6. (Previously Presented): The cover assembly of claim 1 wherein said pressure plate comprises a generally rectangular piece of metal with robotic access features.

7. (Canceled).

8. (Canceled).

9. (Canceled).

10. (Canceled).

11. (Previously Presented): The cover assembly of claim 1 wherein said cover top includes a central, longitudinally extending portion contacting said pressure plate and lateral portions extending upwardly from said central portion at their inner edges, said sides extending downwardly from the outer edges of said lateral portions, whereby the lateral portions and the central portion provide a resilient force that bears downward on said pressure plate and upward on the bottom edges of said microplate.

12. (Previously Presented): The assembly of claim 1 including longitudinal tabs, extending from said first and second sides, whereby said cover may be disengaged from or engaged with said microplate by displacing said longitudinal tabs laterally outwardly or inwardly to move said projections away from or beneath said bottom edges of said microplate.

13. (Previously Presented): A cover assembly for a microplate, said assembly comprising:

a layer of material shaped and dimensioned to removably seal a plurality of a microplate's well openings;

a pressure plate disposed on said layer of material for dispersing a compressive force in a generally uniform manner across said layer of material; and

a cover having a top and first and second sides, said top including a central, longitudinally extending portion in contact with said pressure plate and lateral portions extending upwardly from central portion at their inner edges, said sides extending downwardly from the outer edges of said planar portions and including projections that extend beneath bottom edges of said microplate;

whereby said lateral portions and said central portion provide a resilient force that bears downward on said pressure plate and upward on the bottom edges of said microplate.

14. (Previously Presented): The assembly of claim 13 including longitudinal tabs, extending tabs from said first and second sides, whereby said cover may be disengaged from or engaged with said microplate by displacing said longitudinal tabs laterally outwardly or inwardly to move said projections away from or beneath said bottom edges of said microplate.

15. (Previously Presented): A cover assembly for a microplate, said assembly comprising:

a layer of compressible material shaped and dimensioned to removably seal a plurality of a microplate's well openings;

a pressure plate disposed on said layer of material for dispersing a compressive force in a generally uniform manner across said layer; and

a cover having a top and first and second sides, said sides extending downwardly from the outer edges of said top and including projections that extend beneath the bottom edges of said microplate, said top bowing upwardly from a central portion thereof to said sides, whereby said top provides a resilient force that bears downwardly on said pressure plate and upwardly on the bottom edges of said microplate.

16. (Previously Presented): The assembly of claim 15 including longitudinal tabs, extending from said first and second sides, whereby said cover may be disengaged from, or engaged with said microplate by displacing said longitudinal tabs laterally outwardly or inwardly to move said projections away from or beneath said bottom edges of said microplate.

17. (Previously Presented): The assembly of claim 15 including:

a plurality of vertical tabs, generally perpendicular to said top, extending downward from said projections; and

a plurality of recesses in said assembly that register with said vertical tabs, whereby a plurality of cover assemblies can be stacked, with the vertical tabs on a cover extending into the recesses of a cover assembly that is disposed beneath.